Article title	Anticonvulsant Drug Toxicity in Rat Brain Cell Aggregate Cultures
Article identifier	0887233395100488
Authors	Schilter_B Noldner_M Chatterjee_S_S Honegger_P
Journal title	Toxicology in Vitro
ISSN	0887-2333
Publisher	Pergamon
Year of publication	1995
Volume	9
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Page range	381-386
Number of pages	6
User name	Adonis
Cost centre	Development
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Article title	In Vitro Cellular Models for Cardiac Development and Pharmacotoxicology
Article identifier	0887233395100613
Authors	Wobus_A_M Rohwedel_J Maltsev_V Hescheler_J
Journal title	Toxicology in Vitro
ISSN	0887-2333
Publisher	Pergamon
Year of publication	1995
Volume	9
Issue	4
Supplement	0
Page range	477-488
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Cost centre	Development
PCC	$20.00
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4 ANSWER 3 OF 3 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 2
AN 1999263952 EMBASE
TI Prevalidation of the Embryonic **Stem** Cell Test (EST) - A new in vitro embryotoxicity test.
AU Scholz G.; Genschow E.; Pohl I.; Bremer S.; Paparella M.; Raabe H.; Southee J.; Spielmann H.
CS G. Scholz, ZEBET, Federal Institute Health Protection, Consumers and Veterinary Medicine, Berlin, Germany
SO Toxicology in Vitro, (1999) 13/4-5 (675-681).
Refs: 18
ISSN: 0887-2333 CODEN: TIVIEQ
PUI S 0887-2333(99)00046-6
CY United Kingdom
DT Journal; Conference Article
FS 021 Developmental Biology and Teratology
037 Drug Literature Index
052 Toxicology
LA English
SL English
AB Pluripotent embryonic **stem** cells (ES cells) of the mouse (cell-line D3) can be maintained in the undifferentiated state in the presence of LIF (Leukaemia Inhibitory Factor). Upon withdrawal of LIF, these cells differentiate into various cell types under appropriate conditions. This property of ES cells allowed us to develop an in vitro embryotoxicity test, the Embryonic **Stem** Cell Test (EST; In Vitro Toxicology 1997, 10, 119-127), which does not require taking embryonic cells or tissues from pregnant animals. In the EST, the effect of test chemicals on three endpoints is assessed: inhibition of the differentiation of ES cells into contracting myocard, cytotoxicity in ES cells and cytotoxicity in mouse 3T3 fibroblasts, which are serving as differentiated cells in the test. The results of a prevalidation study of the EST are described, which was conducted according to the ECVAM prevalidation scheme. In the first stage of the study (Phase I), a standard operating procedure (SOP) was elaborated. In the second phase (Phase II), the interlaboratory transferability of the EST was assessed using three test chemicals representing three classes of embryotoxicity (a strong, a weak and a non-embryotoxic chemical) in two European laboratories (**ZEBET** at the BgVV in Berlin, Germany; ECVAM at the JRC in Ispra, Italy) and one US laboratory (Institute for In Vitro Sciences (IIVS) in Gaithersburgh, MA, USA). In the final stage of prevalidation (Phase III), nine test chemicals and a positive control were tested under blind conditions at **ZEBET** and ECVAM. The statistical evaluation of the results led to the development of an improved prediction model for the EST. Copyright (C) 1999 Elsevier Science Ltd.

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L16 ANSWER 3 OF 8 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 2
AN 95259045 EMBASE
DN 1995259045
TI In vitro cellular models for cardiac development and pharmacotoxicology.
AU Wobus A.M.; Rohwedel J.; Maltsev V.; Hescheler J.
CS Inst. Pflanzengen./Kulturpflanzenf., Correnssstr. 3,D-06466 Gatersleben, Germany
SO Toxicology in Vitro, (1995) 9/4 (477-488).
ISSN: 0887-2333 CODEN: TIVIEQ
CY United Kingdom
DT Journal; Conference Article
FS 018 Cardiovascular Diseases and Cardiovascular Surgery
021 Developmental Biology and Teratology
030 Pharmacology
037 Drug Literature Index
052 Toxicology
LA English
SL English
AB Permanent cultures of cardiac cells described so far have limited value for studying cell biology and pharmacology of the developing heart because of the loss of proliferative capacity and cardiac-specific properties of cardiomyocytes during long-term cultivation. Pluripotent embryonic carcinoma (EC) and embryonic stem (ES) cells cultivated as permanent lines offer a new approach for studying cardiogenic differentiation in vitro. We describe cardiogenesis in vitro by differentiating EC and ES cells by way of embryo-like aggregates (embryoid bodies) into spontaneously beating cardiomyocytes. During cardiomyocyte differentiation three distinct developmental stages were defined by expression of specific action potentials and ionic currents measured by the whole-cell patch-clamp technique. Whereas early differentiated cardiomyocytes are characterized by action potentials and ionic currents typical for early pacemaker cells, terminally differentiated cardiomyocytes show action potentials and ionic currents inherent to ventricular-, atrial- or sinus nodal-like cells. These functional characteristics are in accordance with the expression of .alpha.- and .beta.-cardiac myosin heavy chain at early differentiation stages and the additional expression of ventricular-specific MLC-2V and atrial-specific ANF genes at terminal stages demonstrated by reverse transcription polymerase chain reaction (RT-PCR) analysis. Pharmacological studies performed by measuring chronotropic responses and by analysing the Ca2+ channel activity correspond to data obtained with cardiac cells from living organisms. For testing the influence of exogenous compounds on cardiac differentiation the **teratogenic** compound retinoic acid (RA) was applied during distinct stages of **embryoid body** development. A temporally controlled influence of RA on cardiac differentiation and expression of cardiac-specific genes was found. We conclude that ES cell-derived cardiomyocytes provide an excellent cellular model to study early cardiac development and to perform pharmacological and embryotoxicological investigations.

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=> d his

     (FILE 'HOME' ENTERED AT 08:59:18 ON 12 JUL 2001)

     FILE 'MEDLINE' ENTERED AT 08:59:28 ON 12 JUL 2001
L1            74 S EMBRYOID BODY/AB,BI
L2             3 S L1 AND (TOXIC? OR TERATOGEN?)/AB,BI
L3            80 S (EMBRYONIC STEM OR PRIMORDIAL GERM) AND (TERATOGEN? OR
TOXIC?
L4            25 S L3 AND EXPRESSION/AB,BI

     FILE 'STNGUIDE' ENTERED AT 09:02:30 ON 12 JUL 2001

     FILE 'MEDLINE' ENTERED AT 09:10:09 ON 12 JUL 2001
L5            19 S L1 AND (TEST? OR ASSAY?)/AB,BI

     FILE 'STNGUIDE' ENTERED AT 09:11:14 ON 12 JUL 2001

     FILE 'MEDLINE' ENTERED AT 09:17:28 ON 12 JUL 2001
L6          3049 S L1 OR EMBRYONIC STEM OR PRIMORDIAL GERM/AB,BI
L7           131 S L6 AND DRUG# AND (ASSAY? OR PROFILE# OR TEST?)/AB,BI
L8            53 S L7 AND EXPRESSION/AB,BI
L9            49 S L8 AND (PROTEIN# OR GENE#)/AB,BI

     FILE 'MEDLINE, EMBASE, BIOSIS, INPADOC, CAPLUS' ENTERED AT 09:28:40 ON
12
     JUL 2001
                E SNODGRASS H/AU
L10         149 S E3 OR E10 OR E11
L11           3 S L10 AND EMBRYOID BOD?/AB,BI
L12           2 DUP REM L11 (1 DUPLICATE REMOVED)
L13          17 S L10 AND (EMBRYONIC STEM OR PRIMORDIAL GERM)/AB,BI
L14           8 DUP REM L13 (9 DUPLICATES REMOVED)
L15          19 S L2
L16           8 DUP REM L15 (11 DUPLICATES REMOVED)
L17      248091 S EMBRYOID OR EMBRYONIC OR PRIMORDIAL/AB,BI
L18        4528 S L17 AND PROFIL?/AB,BI
L19         646 S L18 AND (DRUG# OR TOXI? OR TERATOGEN?)/AB,BI
L20         173 S L19 AND (TEST? OR ASSAY?)/AB,BI
L21          15 S L20 AND SCREEN?/AB,BI
L22          11 DUP REM L21 (4 DUPLICATES REMOVED)
L23          24 S L20 AND (PROTEIN EXPRESSION OR GENE EXPRESSION)/AB,BI
L24          22 DUP REM L23 (2 DUPLICATES REMOVED)

    FILE 'STNGUIDE' ENTERED AT 09:43:08 ON 12 JUL 2001
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=> d his

     (FILE 'HOME' ENTERED AT 11:44:08 ON 12 JUL 2001)

     FILE 'MEDLINE, EMBASE, BIOSIS, INPADOC, CAPLUS' ENTERED AT 11:44:18 ON
12
     JUL 2001
L1            25 S EMBRYONIC STEM CELL TEST/AB,BI
L2            11 DUP REM L1 (14 DUPLICATES REMOVED)

     FILE 'STNGUIDE' ENTERED AT 11:45:05 ON 12 JUL 2001
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